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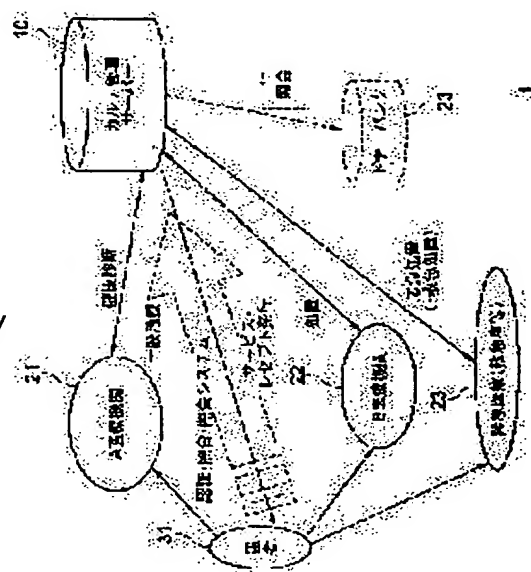
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(54) MEDICAL INFORMATION SYSTEM, MEDICAL INFORMATION SERVER DEVICE, MEDICAL INFORMATION TERMINAL DEVICE, AND MEDICAL INFORMATION CONTROL METHOD

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a medical information system capable of providing information related to a patient for recognizing correct symptoms of the patient, and conducting the optimum medical examination and treatment properly anytime and anywhere to a medical worker who needs it.

SOLUTION: The patient 31 may undergo a medical examination at a medical institution A 21, undergo treatment at a medical institution B 22, or utilize an emergency medical facility 23 such as an ambulance. At that time, each medical institution requests a medical record control server 10 to provide anamneses, current medication, consultation history, allergy information, etc., of the patient 31, and executes proper inspection and treatment based on these. The medical institution treating the patient 31 accumulates symptoms and doctor's opinions related to the treatment this time, contents of the treatment, medication provided, information of newly found allergies, etc., and information of medical cost, inspection cost, etc., in the medical record control server 10.



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CLAIMS

[Claim(s)]

[Claim 1] A medical information systems program characterized by providing the following Server equipment which outputs information within the limits on authority of those who retrieve said information concerning those who are the individuals who memorize information concerning individual medicine, and by whom information concerning said medicine is memorized according to a demand from those who perform a medical action at least, and receive the medical action concerned, and perform said medical action A communication terminal with which those who said information concerning those who receive said said medical action outputted is inputted, and perform said medical action at least are provided

[Claim 2] Said communication terminal is a medical information systems program according to claim 1 which is respectively prepared for a medical institution and is connected by communication network where said said two or more formed communication terminals and said server equipment can transmit and receive said information.

[Claim 3] Said medical institution is a medical information systems program of emergency medical service equipment containing each advocacy item medical-examination engine of a medical institution which has two or more medical-examination advocacy items, and a medical institution which has two or more medical-examination advocacy items, a medical institution of a single medical-examination advocacy item, and an emergency cart, a medical institution which performs a medical checkup, and an engine concerning transplantation of people's organ according to claim 2 which contains either at least.

[Claim 4] Information concerning said individual's medicine is a medical information systems program according to claim 1 which is the information on information which specifies an individual, a blood group, a family and contact information, previous illness hysteresis, allergy information, consultation hysteresis, therapy hysteresis, formula hysteresis, medication hysteresis, first-aid-treatment hysteresis, a medical checkup result, medical-examination cost information, donor information, and insurance information which contains either at least.

[Claim 5] Said server equipment is a medical information systems program according to claim 1 which outputs information within the limits on predetermined [which retrieves said information concerning the individual concerned according to a demand from a surrogate concerning an individual by whom information concerning said medicine is memorized further, or the individual concerned, and is determined corresponding to the claimant concerned].

[Claim 6] Said communication terminal is a medical information systems program according to claim 5 which is respectively formed for every further predetermined area, and is connected by communication network where said said two or more formed communication terminals and said server equipment can transmit and receive said information.

[Claim 7] The medical information systems program according to claim 1 which outputs within the limits of predetermined [which the range of information to output is determined for every predetermined partition of those who perform a medical action based on relation with those who receive a job and a medical action in said server equipment, and is determined based on said partition of those who perform said medical action which required the information concerned for said retrieved information].

[Claim 8] A predetermined partition of those who perform said medical action is a medical information systems program of those who carry out medical aid to the medical practitioner in charge of those who receive said medical action, a medical practitioner, a nurse, or emergency according to claim 7 which contains either at least.

[Claim 9] Said server equipment is a medical information systems program according to claim 7 which performs discernment and authentication of those who demand said information through said communication terminal using a function of portable mold information processing data medium which the information-requirements person concerned holds.

[Claim 10] Medical information server equipment characterized by providing the following A storage means to memorize information concerning individual medicine A demand receiving means to receive a demand of said

information concerning those who receive a medical action from those who perform a medical action transmitted through a communication network An information retrieval means to retrieve said information concerning those who receive said said demanded medical action An information selection means to choose predetermined information within the limits on authority of those who perform said medical action from said retrieved information, and an information transmitting means to transmit said selected information to those who perform said medical action through said communication network

[Claim 11] Information concerning said individual's medicine is medical information server equipment according to claim 10 which is the information on information which specifies an individual, a blood group, a family and contact information, previous illness hysteresis, allergy information, consultation hysteresis, therapy hysteresis, formula hysteresis, medication hysteresis, first-aid-treatment hysteresis, a medical checkup result, medical-examination cost information, donor information, and insurance information which contains either at least.

[Claim 12] Said demand receiving means receives a demand of said information which starts the individual concerned from a surrogate concerning an individual by whom information concerning said medicine is memorized further, or the individual concerned. Said information retrieval means Information concerning said said demanded individual is retrieved. Said information selection means It is medical information server equipment according to claim 10 with which information within the limits on predetermined [which is determined from said retrieved information corresponding to a claimant of said information] is chosen, and said information transmitting means transmits said selected information to said individual or said surrogate through said communication network.

[Claim 13] The medical information server equipment according to claim 10 which chooses the information within the limits on predetermined [which the range of the information choose is determined for every predetermined partition of those who perform the medical action based on relation with those who receive a job and a medical action in said information selection means, and is determined from said information which retrieved based on said partition of those who perform said medical action which required the information concerned].

[Claim 14] A predetermined partition of those who perform said medical action is medical information server equipment of those who carry out medical aid to the medical practitioner in charge of those who receive said medical action, a medical practitioner, a nurse, or emergency according to claim 13 which contains either at least.

[Claim 15] It is medical information server equipment according to claim 10 with which it has further a discernment authentication means to perform discernment and authentication of those who demand said information, and said demand receiving means receives substantially effectively a demand of said information from those who were accepted to be suitable as a result of said discernment and authentication.

[Claim 16] A medical information terminal unit characterized by providing the following A demand input means to input a demand of information concerning a specific individual's medicine A demand transmitting means to transmit to server equipment which memorizes information which consults individual <TXF FR=0001 HE=250 WI=080 LX=0200 LY=0300> people's medicine through a communication network in said inputted demand, retrieves information demanded according to a demand, and outputs information within the limits on an information-requirements person's authority An information receiving means to receive said information transmitted through a communication network from said server equipment An information output means to output said received information

[Claim 17] It is the medical information terminal unit according to claim 16 with which it has further a discernment authentication means to perform discernment and authentication of a user who inputs a demand of said information, and said demand input means receives substantially effectively a demand of said information from a user accepted to be suitable as a result of said discernment and authentication.

[Claim 18] Said discernment authentication means is a medical information terminal unit according to claim 17 which reads information which specifies said owner and performs said discernment and authentication based on the information concerned from portable mold information processing data medium by which information which said user holds and specifies an owner at least was memorized.

[Claim 19] Said discernment authentication means is a medical information terminal unit according to claim 18 which transmits information which specifies said owner who read from said portable mold information processing data medium to said server equipment, requires discernment and authentication of a user of the server equipment concerned, and receives discernment and an authentication result from said server equipment.

[Claim 20] A medical information terminal unit according to claim 16 which is respectively prepared for each advocacy item medical-examination engine of a medical institution which has two or more medical-examination advocacy items, and a medical institution which has two or more medical-examination advocacy items, a medical institution of a single medical-examination advocacy item, a medical institution that performs a medical checkup, and a medical institution of an engine concerning transplantation of people's organ which contains either at least, and is used by health care professionals.

[Claim 21] A medical information terminal unit according to claim 16 which is formed for every predetermined area and used for said server equipment by surrogate of an individual by whom information concerning medicine is memorized, and the individual concerned.

[Claim 22] A medical information terminal unit according to claim 16 used by health care professionals who are carried in emergency medical service equipment containing an emergency cart, and perform a specific medical action in emergency.

[Claim 23] The medical information-management method of offering the information concerning said medicine which starts those who receive a medical action when there is a demand from those who accumulate said information which transmits information concerning medicine of an individual generated in each medical institution to server equipment, and is transmitted by two or more medical institutions in said server equipment for every individual, and perform a medical action at least and which is accumulated within the limits of the authority of those who perform said medical action.

[Claim 24] For said medical institution, said each medical institution is the medical information management method of emergency medical service equipment containing each advocacy item medical-examination engine of a medical institution which has two or more medical-examination advocacy items, and a medical institution which has two or more medical-examination advocacy items, a medical institution of a single medical-examination advocacy item, and an emergency cart, a medical institution which performs a medical checkup, and an engine concerning transplantation of people's organ according to claim 23 which contains either at least.

[Claim 25] Information concerning said individual's medicine is the medical information management method according to claim 23 which is the information on information which specifies an individual, a blood group, a family and contact information, previous illness hysteresis, allergy information, consultation hysteresis, therapy hysteresis, formula hysteresis, medication hysteresis, first-aid-treatment hysteresis, a medical checkup result, medical-examination cost information, donor information, and insurance information which contains either at least.

[Claim 26] Furthermore, a medical information management method according to claim 23 of offering information concerning medicine of said individual concerned accumulated within the limits of predetermined [which is determined corresponding to the claimant concerned] when there is a demand from a surrogate concerning an individual by whom information concerning said medicine is memorized, or the individual concerned.

[Claim 27] Authority of those who perform said medical action is the medical information management method according to claim 23 determined based on relation with those who receive a job and a medical action of those who perform the medical action concerned.

[Claim 28] Authority of those who perform said medical action is the medical information management method according to claim 23 determined for every partition of those who perform a medical action of those who carry out medical aid to the medical practitioner in charge of those who receive said medical action, a medical practitioner, a nurse, or emergency which contains either at least.

[Claim 29] A medical information management method according to claim 23 of receiving substantially effectively a demand of said information from those who performed discernment and authentication of those who input a demand of said information, and were accepted being suitable as a result of said discernment and authentication.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] This invention relates to the medical information systems program for providing for the health care professionals who need anywhere appropriately [when] the information concerning a patient required in order to perform the check and the optimal medical examination of an exact symptom of a patient, medical information server equipment and a medical information terminal unit, and the medical information management method of managing medical information such.

[0002]

[Description of the Prior Art] Conventionally, oneself judges based on a symptom etc. and those (this is henceforth called patient.) who are going to use a medical institution by a certain illness, an injury or a precaution, etc. usually choose consultation items (this is henceforth called medical-examination advocacy item.), such as internal medicine, surgery, otorhinolaryngology, ophthalmology, obstetrics and gynecology, and neurology, and or they are nearby, it will start and they will go out to the medical institution of the price. And in the medical institution which went out, it replies to a questionnaire like an interview sheet, and a medical examination of a medical practitioner is received in many cases, referring to this. Moreover, at the time of re-examination, the clinical recording for every patient with which the symptom till then, a medical-examination measure, administration drugs, etc. were recorded is referred to, and a check, new medical-examination equipment, etc. of a symptom are performed by the medical practitioner.

[0003]

[Problem(s) to be Solved by the Invention] However, it has set to such a conventional medical-examination method and the consultation method, and the technical problem of shoes occurs. First, in order for a patient or the person of attendance to notify a patient's symptom to a medical practitioner appropriately, even if it uses an interview sheet, there will be a limit, it is only using a report of such an interview sheet or a patient as preliminary information of an outline to the last, and the importance beyond it cannot be expected. Then, although a medical practitioner will examine and grasp the aspect of a patient actual with a natural thing, a symptom, etc., leaving grasp and the optimal therapy of a patient's symptom only to a medical practitioner's workmanship may also have a limit, and they may be ** for a medical practitioner. For example, it is the case where grasp and therapy of a symptom can be appropriately performed for the first time by getting to know a previous illness, the therapy condition in a relative's illness condition, hereditary illness hysteresis, or other medical-examination advocacy items, a medication condition, the latest therapy condition, the latest medication condition, etc.

[0004] Of course, although I have a patient indicate an interview sheet which was mentioned above in order to grasp such a condition, as mentioned above, the contents of the interview sheet which the patient who is not an expert indicates based on storage of him cannot trust completely the contents required information was indicated to be in the top which is not indicated enough in many cases, either. Consequently, a diagnosis of a patient will be left to a medical practitioner's intuition, experience, and medicine capacity after all.

[0005] In order to raise the precision of a check a patient's symptom under such a condition, a medical practitioner may perform a preliminary diagnosis etc. However, this preliminary diagnosis can take neither time amount nor time and effort, and quick medical examination cannot be performed. Moreover, the problem that a check or the optimal medical examination of an exact symptom cannot be performed since there is such no enough and suitable information becomes remarkable by the case where medical examination is undergone in the hospital which has not usually started by unforeseen accidents, such as a travel and a business trip, etc., when a patient undergoes medical examination in areas other than the area which is usually living.

[0006] Therefore, the purpose of this invention is to offer the medical information systems program, the medical information server equipment, and the medical information terminal unit with which the health care professionals who need anywhere appropriately [when] the information concerning a patient required in order to perform the

check and the optimal medical examination of an exact symptom of a patient can be provided. Moreover, other purposes of this invention manage appropriately the information concerning a patient required in order to perform the check and the optimal medical examination of an exact symptom of a patient, and are to offer the medical information management method which can be offered suitable for the needing health care professionals.

[0007]

[Means for Solving the Problem] In order to solve said technical problem, a medical information systems program concerning this invention Memorize information concerning individual medicine and a demand is accepted from those who perform a medical action at least. Server equipment which outputs information within the limits on authority of those who retrieve said information concerning those who are the individuals by whom information concerning said medicine is memorized, and receive the medical action concerned, and perform said medical action, Said information concerning those who receive said said medical action outputted is inputted, and it has a communication terminal with which those who perform said medical action at least are provided.

[0008] Suitably, said communication terminal is respectively prepared for a medical institution, and said said two or more formed communication terminals and said server equipment are connected by communication network which can transmit and receive said information. Suitably, said server equipment is performed using a function of portable mold information processing data medium in which the information-requirements person concerned holds discernment and authentication of those who demand said information through said communication terminal.

[0009] Specifically, said medical institution contains either, even if there are few emergency medical service equipment containing each advocacy item medical-examination engine of a medical institution which has two or more medical-examination advocacy items, and a medical institution which has two or more medical-examination advocacy items, a medical institution of a single medical-examination advocacy item, and an emergency cart, medical institutions which perform a medical checkup, and engines concerning transplantation of people's organ. Moreover, specifically, information concerning said individual's medicine is information on information which specifies an individual, a blood group, a family and contact information, previous illness hysteresis, allergy information, consultation hysteresis, therapy hysteresis, medication hysteresis, first-aid-treatment hysteresis, a medical checkup result, medical-examination cost information, donor information, and insurance information which contains either at least.

[0010] Suitably, said server equipment retrieves said information concerning the individual concerned according to a demand from a surrogate concerning an individual by whom information concerning said medicine is memorized further, or the individual concerned, and outputs information within the limits on predetermined [which is determined corresponding to the claimant concerned]. Suitably, said communication terminal is respectively formed for every further predetermined area, and said said two or more formed communication terminals and said server equipment are connected by communication network which can transmit and receive said information.

[0011] The range of information to output is determined for every predetermined partition of those who perform suitably a medical action based on relation with those who receive a job and a medical action in said server equipment, and it outputs within the limits of predetermined [which is determined based on said partition of those who perform said medical action which required the information concerned for said retrieved information]. Specifically, a predetermined partition of those who perform said medical action contains either, even if there are little those who carry out medical aid to the medical practitioner in charge of those who receive said medical action, a medical practitioner, a nurse, or emergency.

[0012] Moreover, a storage means to memorize information which medical information server equipment concerning this invention requires for individual medicine, A demand receiving means to receive a demand of said information concerning those who receive a medical action from those who perform a medical action transmitted through a communication network, An information retrieval means to retrieve said information concerning those who receive said said demanded medical action, It has an information selection means to choose predetermined information within the limits on authority of those who perform said medical action from said retrieved information, and an information transmitting means to transmit said selected information to those who perform said medical action through said communication network.

[0013] Moreover, a demand input means by which a medical information terminal unit concerning this invention inputs a demand of information concerning a specific individual's medicine, A demand transmitting means to transmit to server equipment which memorizes information which consults individual medicine through a communication network in said inputted demand, retrieves information demanded according to a demand, and outputs information within the limits on an information-requirements person's authority, It has an information receiving means to receive said information transmitted through a communication network from said server equipment, and an information output means to output said received information.

[0014] Moreover, a medical information management method concerning this invention transmits information

concerning medicine of an individual generated in each medical institution to server equipment. When there is a demand from those who accumulate said information transmitted by two or more medical institutions in said server equipment for every individual, and perform a medical action at least, information concerning said medicine concerning those who receive a medical action accumulated is offered within the limits of authority of those who perform said medical action.

[0015]

[Embodiment of the Invention] The medical information systems program of the gestalt of 1 operation of this invention is explained with reference to drawing 1 - drawing 6.

[0016] First, the outline of a medical information systems program 1 is explained with reference to drawing 1. Drawing 1 is drawing for explaining the outline of the function of the medical information systems program 1. A medical information systems program 1 is a system which enabled it to perform the check and the optimal medical examination of an exact symptom of a patient by providing a medical institution with the information concerning the patient, when the information concerning the patient managed or generated in each medical institution is accumulated unitary, and is managed and a patient newly receives a certain medical action.

[0017] Like usual, he carries out to the A medical institution 21, and a patient 31 carries out to the B medical institution 22, and and, specifically, he uses [the treatment of the medical examination of the illness, surgical treatment, etc. is received, or] the emergency care equipment 23 of an ambulance etc. according to sudden accident and the sudden illness. [receiving a medical checkup] In that case, in each medical institutions 21-23, it require of the clinical recording management server 10, and the patient 31 previous illness, a current recipe drug, a consultation condition, allergy information, etc. be acquire, and based on this, the illness which have already start become more serious further, or allergy occur, or a suitable inspection, a suitable therapy, etc. be perform so that the side effect by the drug etc. may not occur.

[0018] And the medical institutions 21-23 which treated the patient 31 accumulate the information to medical-examination costs and medical checkup costs in the clinical recording management server 10 in information, such as a view of the symptom concerning this therapy, or a medical practitioner, the contents of treatment, an administration drug, and allergy that newly became clear, and the gestalt of this operation. When treating the patient 31 next time, it enables it to perform suitable treatment with reference to the newest information by this. Moreover, in a medical information systems program 1, when a patient 31 can give the clinical recording management server 10 direct access, and its own clinical recording data can also be checked and a patient 31 accesses the A medical institution 21 and the B medical institution 22 through a communication network, reservation of inspection or medical examination or oral consultation can also be performed.

[0019] Moreover, when the patient's 31 organ etc. is temporarily used by transplantation, and the medical institution called so-called donor bank 24 accesses the clinical recording management server 10 and checks the donor's data, the adjustment of an organ etc. can be checked more appropriately and quickly. the various information concerning such medicine in a medical information systems program 1 -- if it puts in another way, all information will be managed unitary and it will enable it to use it effectively

[0020] The configuration of such a medical information systems program 1 is concretely explained with reference to drawing 2. As shown in drawing 2, a medical information systems program 1 has equipment 300 and a communication network 400 in medical information server equipment 100, the medical information terminal unit 200, the ambulance information terminal unit 210, and the end of a patient end.

[0021] Medical information server equipment 100 accumulates the medical information for every each people, and is a server which offers information suitably according to a demand of the medical information demanded through a communication network 400 from the node of the arbitration which contains equipment 300 in the medical information terminal unit 200 or the end of a patient end. The configuration of medical information server equipment 100 is explained with reference to drawing 3. Medical information server equipment 100 has the clinical recording management server 10, the personal authentication / collating section 120, and the medical-examination advocacy item selection section 130. In addition, in drawing 1, only the configuration section of this clinical recording management server 10 that is the main function of medical information server equipment 100 is illustrated.

[0022] As the clinical recording management server 10 mentioned above, when treating a patient, it is the server with which information, such as the symptom for every use of a medical institution, a medical practitioner's view, the contents of treatment, an administration drug, allergy that newly became clear, medical-examination costs, and medical checkup costs, was accumulated the whole patient, and information is accumulated by the medical institution which treated the patient so that suitable treatment may be performed with reference to the newest information.

[0023] Personal authentication / collating section 120 confirms whether to be those to whom each user who has accessed medical information server equipment 100 through a communication network 400 has the authority to

use medical information server equipment 100. In the gestalt of this operation, all users of a medical information systems program 1, such as staffs of the medical institution which makes a medical practitioner, a nurse, etc. the start, and a patient who undergoes medical examination, shall hold the ID card which consists of so-called IC cards. And it confirms whether to be those to whom that user has the authority which will carry out medical information server equipment 100, and to carry out by attesting to an individual with each terminal unit, and collating with the user list finally registered into medical information server equipment 100 by equipping equipment 300 with this ID card in the medical information terminal unit 200 and the end of a patient end.

[0024] Here, the example of the ID card which each user at this time holds is shown in drawing 4 . drawing 4 (A) -- fingerprint **** -- him -- ID card 510 which attests is shown. In this ID card 510, ID information written section 511 is formed in the surface with a sticker or liquid crystal, and the contents of ID can distinguish now at a glance. and especially in ID card 510, the fingerprint detector 512 is formed in the surface and the fingerprint detected here collates with an internal fingerprint authentication vessel -- having -- him -- authentication is performed. In addition, it is formed in the surface of ID card 510 with the solar panel 513, and, thereby, a power supply is supplied to the internal circuitry of ID card 510.

[0025] drawing 4 (B) -- voice collating or voiceprint collating -- him -- ID card 520 which attests is shown. Also in this ID card 520, ID information written section 511 is formed in the surface, and the contents of ID can distinguish now at a glance. and especially in ID card 520, the microphone 522 is formed in the surface and the voice detected here collates with an internal voice collating machine or an internal voiceprint collating machine -- having -- him -- authentication is performed.

[0026] drawing 4 (C) -- iris collating -- him -- ID card 530 which attests is shown. ID information written section 511 is formed in the surface also in this ID card 530. . and especially in ID card 530, the camera 532 is formed in the surface and images, such as an eye detected here, collate with an internal iris collating vessel -- having -- him -- authentication is performed. As mentioned above, it is explanation of the example of the ID card which each user holds.

[0027] Then, the configuration of medical information server equipment 100 is explained. The medical-examination advocacy item selection section 130 shows whether the medical-examination advocacy item should be consulted to the patient who has accessed medical information server equipment 100 through a communication network 400. The medical-examination advocacy item selection section 130 performs predetermined oral consultation, i.e., a questionnaire, to the patient, and determines the specialties to which consultation is recommended based on the result. In addition, a patient may access medical information server equipment 100 from the medical information terminal unit 200 currently installed in the hospital etc., if medical information server equipment 100 may be accessed from equipment 300 in the patient end end of a house. Moreover, the information input means 230 may perform a questionnaire according to dialogic operation,

transmits the contents of a questionnaire to equipment 300 beforehand in the medical information terminal unit 200 and the end of a patient end, conducts a questionnaire survey in equipment 300 in the medical information terminal unit 200 and the end of a patient end, bundles up a questionnaire result, and you may make it receive it. [0028] The clinical recording management server 10 actually accumulates each people's medical information, and outputs according to a demand. The clinical recording management server's 10 configuration is shown in drawing 5 . As shown in drawing 5 , the clinical recording management server 10 has the communications department 140, the retrieval section 150, a data base 160, and the selection section 170.

[0029] First, the communications department 140 performs a communication link with equipment 300 through a communication network 400 in the medical information terminal unit 200 and the end of a patient end, and receives a demand of the medical information of the specific individual who receives a medical action. if a demand is received, the communications department 140 will notify ID of the claimant to personal authentication / collating section 120 -- the claimant -- a patient's health care professionals and a patient -- it detects whether you are the proper person who demands the medical data of whether you are him or a patient's surrogate and its patient. And when a claimant is a suitable rightful claimant, a demand of the information is outputted to the retrieval section 150. Moreover, the communications department 140 transmits the reply to the demand of medical information inputted from the selection section 170 to equipment 300 in the medical information terminal unit 200 of a requiring agency, or the end of a patient end.

[0030] Based on the demand of a specific individual's medical information inputted by the communications department 140, the retrieval section 150 accesses a data base 160, reads the individual's medical information, and outputs it to the selection section 170.

[0031] A data base 160 is a data base which actually accumulates each people's medical information. The information for collating for specifying authority etc. for every each people in the gestalt of this operation, Identification information, such as a name, a birth date, sex, and a blood group, the address, the telephone number, office, Information, such as donor information concerning offer or a demand of the medical information on

narrow senses, such as attribute information, such as the office telephone number, family information, and health information, previous illness hysteresis, medical-examination information, medication information, and therapy information, medical-examination cost information, and a donor, is recorded.

[0032] from a specific individual's medical information which carried out reading appearance from the data base 160 inputted from the retrieval section 150, based on the authority of the claimant of the information, the selection section 170 selects the information which may be outputted outside, and outputs the information to the communications department 140.

[0033] After confirming whether the claimant is suitable in personal authentication / collating section 120 to the selection demand of a medical-examination advocacy item inputted from equipment 300 through a communication network 400 in the medical information terminal unit 200 and the end of a patient end, the medical-examination advocacy item recommend by performing a questionnaire suitably in the medical-examination advocacy item selection section 130 determines, and it notifies through a communication network 400 in the medical information server equipment 100 of such a configuration. Moreover, after the retrieval section 150 reads the patient's data from a data base 160 after confirming whether the claimant is suitable in personal authentication / collating section 120 similarly, when a demand of individual medical information is actually made, and the selection section 170 selects an output item according to a claimant, it transmits through a communication network 400.

[0034] The medical information terminal unit 200 is a terminal unit connectable with medical information server equipment 100 through the communication network 400 arranged on each medical institution, i.e., a hospital, a hospital, a clinic, a health center, or a donor bank. Through this medical information terminal unit 200, each medical practitioner acquires information, such as a patient's information, i.e., a previous illness, allergy, a heredity condition, and a medication condition, and makes grasp of a suitable symptom, the decision of treatment, etc. Moreover, it is freely operated by the visitor to the hospital, it connects with medical information server equipment 100 through a communication network 400, and a hospital's receptionist side and the arranged medical information terminal units 200, such as a waiting room, are used for selection of a consultation item, for example.

[0035] The ambulance information terminal unit 210 is a terminal unit formed in migration emergency care facilities, such as an ambulance, and the function is the same configuration as the medical information terminal unit 200 substantially.

[0036] The end equipment 300 of a patient end is the so-called communication terminal which it is prepared in public facilities, such as each home or a city office which is not directly related to a hospital, etc., and each people connect to medical information server equipment 100 and the medical information terminal unit 200 through a communication network 400. A patient can reserve medical examination to the medical information terminal unit 200 through equipment 300 in this end of a patient end. Moreover, and the function of medical information server equipment 100 determines an advocacy item. [medical information server equipment 100] Moreover, medical information server equipment 100 is accessed and the medical information into which oneself is registered by the function of medical information server equipment 100 is detected to peruse one's medical information.

[0037] A communication network 400 connects equipment 300 mutually possible [a communication link] in medical information server equipment 100, the medical information terminal unit 200, the ambulance information terminal unit 210, and the end of a patient end, and transmits the data concerning the various processings for medical information offer of authentication of each claimant concerning a demand of medical information, the output of medical information, and it etc. between each [these] equipment. A communication network 400 is the communication network of the wide area where various means of communications, such as a telephone network of computer networks, such as a wire net, a radio-communications network, and the Internet, a cable, and wireless and a satellite circuit, were put together suitably if needed.

[0038] With reference to drawing 6 , it explains that the main processings of the medical information systems program 1 of such a configuration flow. First, from equipment 300, the patient who became a certain illness accesses the medical information terminal unit 200 of a general hospital through a communication network 400, and makes an application of medical examination, i.e., reservation, for example, in the end of a patient end (step S10). The point to which equipment 300 accesses in the end of a patient end at this time is like the equipment for introducing two or more hospitals which have been stationed for every area. In the medical information terminal unit 200, if the reservation from equipment 300 is received in the end of a patient end (step S11), the questionnaire survey which is equivalent to oral consultation to equipment 300 in the end of a patient end will be conducted (step S12). And the medical-examination advocacy item which accesses the medical-examination advocacy item selection section 130 of medical information server equipment 100, for example, and is recommended is detected, and it shows around to equipment 300 in the end of a patient end (step S13).

[0039] If a patient actually visits the hospital in a hospital after performing such processing, the patient who visited the hospital in the consultation room etc., for example will confirm whether to be him or not. Therefore,

the personal authentication / collating section 120 of an ID card and medical information server equipment 100 which the patient holds, for example interlock and check (step S14). And if he visited the hospital (step S15), by actuation of a medical practitioner's medical information terminal unit 200, the clinical recording management server 10 of medical information server equipment 100 will be accessed, the patient's medical information will be read (step S16), and it will display on the medical information terminal unit 200 (step S17). A medical practitioner examines a patient, referring to this displayed information (step S18). If a medical examination is completed, medical-examination record, i.e., treatment, and a prescription will be filled in, for example to the medical information terminal unit 200 (step S19), and a prescription will be displayed on the drugs station in the same hospital, or a neighboring chemist's shop (step S20).

[0040] the end of a patient end surrogates, such as a family of the patient who came out of the consultation room, or the patient who came only medicine to the tip, are in the neighborhood of a chemist's shop -- equipment 300 -- the patient -- it is checked [of whether to be him or a proper surrogate] (step S21). This is performed by the IC card which the patient or the surrogate holds as the function of the personal authentication / collating section 120 of medical information server equipment 100 was called and mentioned above from equipment 300 in the end of a patient end being interlocked with. And if it checks that they are a patient or a proper surrogate, medicine is actually received (step S22). By inputting that the member of a bureau of a chemist's shop gave medicine into equipment 300 in the end of a patient end, it is displayed on its post at which this information pays the bill (step S23).

[0041] and -- if the patient or surrogate who received medicine comes to an accounting part -- again -- a patient -- it is checked [of whether to be him or a proper surrogate] (step S24), and if just, accounting will actually be held (step S25) and a series of processings will be ended (step S26).

[0042] Thus, according to the medical information systems program 1 of the gestalt of this operation, medical examination of a hospital can be directly reserved from equipment 300 in the end of a patient end. Moreover, a patient's clinical recording data is treated also in the medical information server equipment 100 through a communication network 400 as data electronized by each in the local system in the patient terminal unit 300. Therefore, production processes, such as retrieval of a clinical recording and its conveyance, are lost, and the processing time concerning handling of a clinical recording is shortened sharply. And the latency time in a patient's hospital is shortened sharply these results. And the possibility of a hospital infection decreases sharply further.

[0043] Moreover, it comes by sharing individual medical records (clinical recording) between a medical-examination engine to grasp quickly and correctly information, such as individual clinical recording (previous illness) and a condition of administration drugs, and the suitable treatment based on the exact information for which it does not depend on storage of an individual is attained. When an ambulance etc. performs an urgent medical action especially, also under the condition that information is not acquired from a patient at all by consciousness losing, suitable information can be acquired and suitable treatment can be performed. Moreover, when the illness is carried out overseas etc., suitable treatment can be received similarly.

[0044] Moreover, even if this common data base is health care professionals, based on that job and relation with a patient, that access range is restricted strictly. Therefore, protection of a patient's privacy is maintained. Moreover, since public presentation of the medical statement by the request from ordinary patients and an individual (person in question) etc. can be performed easily, promotion of information disclosure and spread can be aimed at.

[0045] Moreover, by having electronized all medical information in this way, the concept of cybermoney can be applied to application of insurance, payment of a health care cost, etc., and it can consider as the medical institution where convenience is more high. Moreover, the office man day of deduction for medical expenses is sharply reduced by an insurance-premium-deduction system being interlocked with, for example. Moreover, simplification of medical paperwork, rationalization, increase in efficiency, and speeding up can be attained, and a health care cost can be controlled.

[0046] In addition, enquiry on other donor banks becomes easy, and it can contribute to lifesaving medicine. Moreover, improvement in the iatrotechnique of a case and the health care professionals by the indication of a formula can also be aimed at by share-ization of medical information.

[0047] Moreover, occasionally in an ambulance, it can use as reference information on first-aid treatment, such as existence of a patient's previous illness, a chronic disease, and an allergic constitution, and a blood group, by [whose emergency care is necessity] perusing the individual clinical recording information on an appropriate person. And it can access easily as a means to check a patient's ID in this case, also in the condition which is hard to acquire by using the thing of a non-contact type with an IC card with personal authentication/verification function from oral.

[0048] In addition, this invention is not restricted to the gestalt of this operation, and arbitrary suitable various

modification is possible for it. For example, in the gestalt of this operation, the system of the overconcentration mold which has managed the medical information for every each people intensively in medical information server equipment 100 was illustrated, and this invention was explained. However, it is good also as a configuration of a distributed-processing mold with which it has the data base which has memorized and managed a patient's clinical recording information respectively, they cooperate and coordinate functions, such as for example, a management server, and each medical institution offers medical information integrative, for example. That is, the main point of this invention is to offer appropriately the medical information integrated logically, and an actual physical informational storage gestalt, a network topology, a database management gestalt, etc. are good with the gestalt of arbitration.

[0049] Moreover, terminal units, such as equipment 300, may be constituted as a terminal unit only for medical information, and usual information retrieval equipment may constitute them in the medical information terminal unit 200 mentioned above and the end of a patient end. Moreover, the information terminal unit which has the communication facility at each home, the pocket mold information processor which has communication facility, or a cellular phone may constitute. The information processor of the arbitration which has these communication facility can constitute the terminal unit which receives the medical information concerning this invention.

[0050] Moreover, in the gestalt of this operation, although each people illustrated and explained to drawing 4 the ID card used for authentication, it is not limited to these configurations and data medium of the arbitration which can specify an individual may be used as an ID card. For example, magneto-optic disks, such as optical disks, such as a micro HDD card, and micro CD-ROM / micro CD-R / CD-RW, and micro MO, a magnetic card, etc. may be used.

[0051]

[Effect of the Invention] Thus, according to this invention, the medical information systems program, the medical information server equipment, and the medical information terminal unit with which the health care professionals who need anywhere appropriately [when] the information concerning a patient required in order to perform the check and the optimal medical examination of an exact symptom of a patient can be provided can be offered. Moreover, the information concerning a patient required in order to perform the check and the optimal medical examination of an exact symptom of a patient can be managed appropriately, and the medical information management method which can be offered suitable for the needing health care professionals can be offered.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] Drawing 1 is drawing for explaining the outline of the medical information systems program of the gestalt of 1 operation of this invention.

[Drawing 2] Drawing 2 is drawing showing the configuration of the medical information systems program shown in drawing 1 .

[Drawing 3] Drawing 3 is drawing showing the configuration of the medical information server equipment of the medical information systems program shown in drawing 2 .

[Drawing 4] Drawing 4 is drawing for explaining the ID card which is concerned with the personal authentication / collating section of the medical information server equipment shown in drawing 3 , and each user of medical information server equipment holds.

[Drawing 5] Drawing 5 is the block diagram showing the configuration of the clinical recording management server of the medical information server equipment shown in drawing 3 .

[Drawing 6] Drawing 6 is drawing for explaining the flow of processing in case a patient receives a medical action using the medical information systems program shown in drawing 2 .

[Description of Notations]

1 -- A medical information systems program, 10 -- A clinical recording management server, 21-24 -- Medical institution, 31 -- A patient, 100 -- Medical information server equipment, 120 -- Personal authentication / collating section, 130 [-- Data base,] -- The medical-examination advocacy item selection section, 140 -- The communications department, 150 -- The retrieval section, 160 170 [-- A communication network, 510,520,530 / -- An ID card, 511 / -- ID information written section, 512 / -- A fingerprint detector, 513 / -- A solar panel, 522 / -- A control section, 532 / -- I/O section] -- The selection section, 200 -- A medical information terminal unit, 300 -- The end equipment of a patient end, 400

[Translation done.]

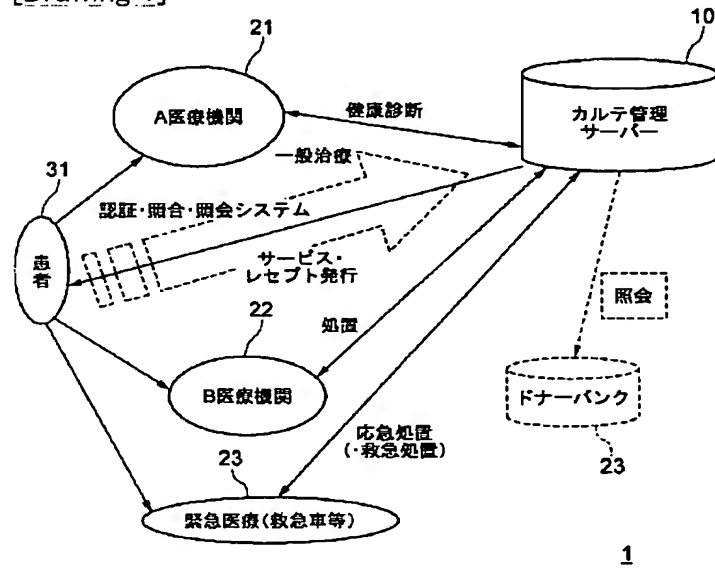
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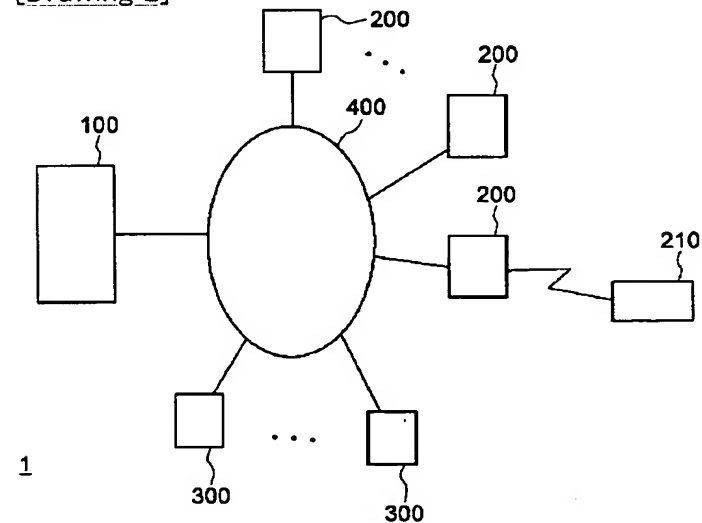
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DRAWINGS

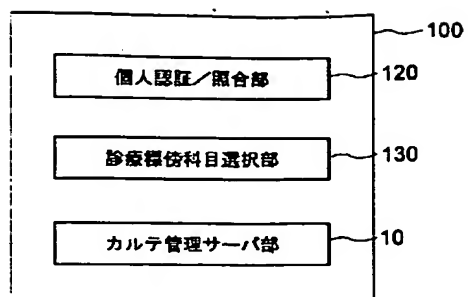
[Drawing 1]



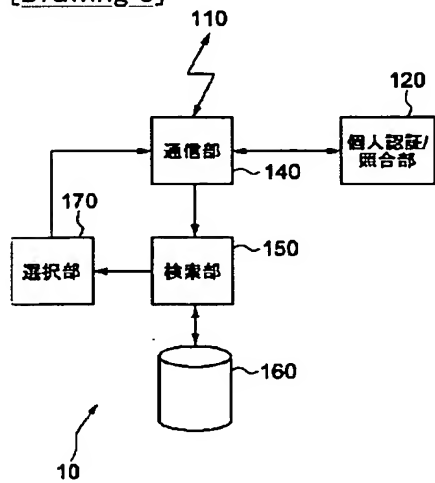
[Drawing 2]



[Drawing 3]

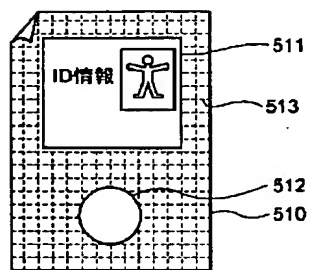


[Drawing 5]

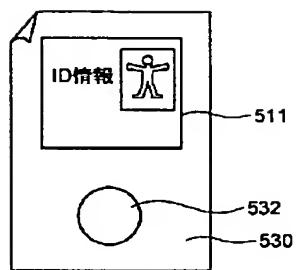


[Drawing 4]

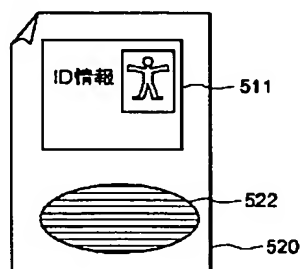
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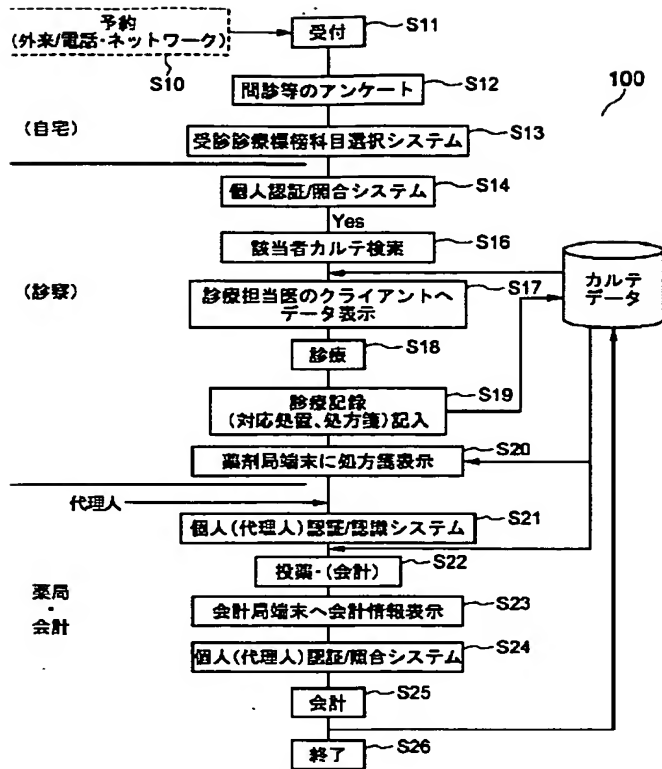
(c)



(b)



[Drawing 6]



[Translation done.]

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【特許請求の範囲】

【請求項 1】個人の医療に係る情報を記憶し、少なくとも医療行為を施す者からの要求に応じて、前記医療に係る情報が記憶されている個人であって当該医療行為を受ける者に係る前記情報を検索し、前記医療行為を施す者の権限の範囲内の情報を出力するサーバ装置と、前記出力される前記医療行為を受ける者に係る前記情報が入力され、少なくとも前記医療行為を施す者に提供する通信端末装置とを有する医療情報システム。

【請求項 2】前記通信端末装置は、医療機関に各々設けられ、

前記設けられた複数の前記通信端末装置と前記サーバ装置は、前記情報を送受信可能な通信ネットワークにより接続されている請求項 1 に記載の医療情報システム。

【請求項 3】前記医療機関は、複数の診療標榜科目を有する医療機関、複数の診療標榜科目を有する医療機関の各標榜科目診療機関、単一の診療標榜科目の医療機関、救急搬送車を含む救急医療設備、健康診断を行なう医療機関、人の器官の移植に係わる機関の少なくともいずれかを含む請求項 2 に記載の医療情報システム。

【請求項 4】前記個人の医療に係わる情報は、個人を特定する情報、血液型、家族・連絡先情報、既往症履歴、アレルギー情報、受診履歴、治療履歴、処方履歴、投薬履歴、救急処置履歴、健康診断結果、診療費用情報、ドナー情報および保険情報の、少なくともいずれかを含む情報である請求項 1 に記載の医療情報システム。

【請求項 5】前記サーバ装置は、さらに、前記医療に係る情報が記憶されている個人または当該個人に係る代理人からの要求に応じて、当該個人に係る前記情報を検索し、当該要求者に対応して決定される所定の範囲内の情報を出力する請求項 1 に記載の医療情報システム。

【請求項 6】前記通信端末装置は、さらに所定の地域ごとに各々設けられ、

前記設けられた複数の前記通信端末装置と前記サーバ装置は、前記情報を送受信可能な通信ネットワークにより接続されている請求項 5 に記載の医療情報システム。

【請求項 7】前記サーバ装置においては、職務および医療行為を受ける者との関係に基づく医療行為を施す者の所定の区分ごとに、出力する情報の範囲が決定されており、前記検索した情報を、当該情報の要求を行なった前記医療行為を施す者の前記区分に基づいて決定される所定の範囲内で出力する請求項 1 に記載の医療情報システム。

【請求項 8】前記医療行為を施す者の所定の区分は、前記医療行為を受ける者の担当医師、医師、看護婦あるいは救急に医療処置を行なう者の少なくともいずれかを含む請求項 7 に記載の医療情報システム。

【請求項 9】前記サーバ装置は、前記情報の要求を行なう者の識別および認証を、前記通信端末装置を介して、当該情報要求者が保持する可搬型情報処理媒体の機能を

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用いて行なう請求項 7 に記載の医療情報システム。

【請求項 10】個人の医療に係る情報を記憶する記憶手段と、

通信ネットワークを介して送信される、医療行為を施す者からの、医療行為を受ける者に係る前記情報の要求を受信する要求受信手段と、

前記要求された前記医療行為を受ける者に係る前記情報を検索する情報検索手段と、

前記検索した情報より前記医療行為を施す者の権限の範囲内の所定の情報を選択する情報選択手段と、

前記選択した情報を前記通信ネットワークを介して、前記医療行為を施す者に送信する情報送信手段とを有する医療情報サーバ装置。

【請求項 11】前記個人の医療に係わる情報は、個人を特定する情報、血液型、家族・連絡先情報、既往症履歴、アレルギー情報、受診履歴、治療履歴、処方履歴、投薬履歴、救急処置履歴、健康診断結果、診療費用情報、ドナー情報および保険情報の、少なくともいずれかを含む情報である請求項 10 に記載の医療情報サーバ装置。

【請求項 12】前記要求受信手段は、さらに、前記医療に係る情報が記憶されている個人または当該個人に係る代理人からの当該個人に係る前記情報の要求を受信し、前記情報検索手段は、前記要求された前記個人に係る情報を検索し、

前記情報選択手段は、前記検索した情報より前記情報の要求者に対応して決定される所定の範囲内の情報を選択し、

前記情報送信手段は、前記選択した情報を前記通信ネットワークを介して、前記個人または前記代理人に送信する請求項 10 に記載の医療情報サーバ装置。

【請求項 13】前記情報選択手段においては、職務および医療行為を受ける者との関係に基づく医療行為を施す者の所定の区分ごとに、選択する情報の範囲が決定されており、前記検索した情報より、当該情報の要求を行なった前記医療行為を施す者の前記区分に基づいて決定される所定の範囲内の情報を選択する請求項 10 に記載の医療情報サーバ装置。

【請求項 14】前記医療行為を施す者の所定の区分は、前記医療行為を受ける者の担当医師、医師、看護婦あるいは救急に医療処置を行なう者の少なくともいずれかを含む請求項 13 に記載の医療情報サーバ装置。

【請求項 15】前記情報の要求を行なう者の識別および認証を行なう識別認証手段をさらに有し、

前記要求受信手段は、前記識別および認証の結果適切と認められた者からの前記情報の要求を、実質的に有効に受信する請求項 10 に記載の医療情報サーバ装置。

【請求項 16】特定の個人の医療に係わる情報の要求を入力する要求入力手段と、

前記入力された要求を、通信ネットワークを介して、個

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人の医療に係る情報を記憶し、要求に応じて要求された情報を検索し、情報要求者の権限の範囲内の情報を出力するサーバ装置に送信する要求送信手段と、前記サーバ装置より通信ネットワークを介して送信される前記情報を受信する情報受信手段と、前記受信した情報を出力する情報出力手段とを有する医療情報端末装置。

【請求項17】前記情報の要求を入力する使用者の識別および認証を行なう識別認証手段をさらに有し、前記要求入力手段は、前記識別および認証の結果適切と認められた使用者からの前記情報の要求を実質的に有効に受け付ける請求項16に記載の医療情報端末装置。

【請求項18】前記識別認証手段は、前記使用者が保持し少なくとも所有者を特定する情報が記憶された可搬型情報処理媒体より、前記所有者を特定する情報を読み込み、当該情報に基づいて前記識別および認証を行なう請求項17に記載の医療情報端末装置。

【請求項19】前記識別認証手段は、前記可搬型情報処理媒体より読み込んだ前記所有者を特定する情報を前記サーバ装置に送信し、当該サーバ装置に使用者の識別および認証を要求し、前記サーバ装置より識別および認証結果を受信する請求項18に記載の医療情報端末装置。

【請求項20】複数の診療標榜科目を有する医療機関、複数の診療標榜科目を有する医療機関の各標榜科目診療機関、単一の診療標榜科目の医療機関、健康診断を行なう医療機関、人の器官の移植に係わる機関の少なくともいずれかを含む医療機関に各々設けられ、医療従事者により使用される請求項16に記載の医療情報端末装置。

【請求項21】所定の地域ごとに設けられ、前記サーバ装置に医療に係る情報が記憶されている個人および当該個人の代理人により使用される請求項16に記載の医療情報端末装置。

【請求項22】救急搬送車を含む救急医療設備に搭載され、緊急時に特定の医療行為を行なう医療従事者により使用される請求項16に記載の医療情報端末装置。

【請求項23】各医療機関で発生した個人の医療に係る情報をサーバ装置に送信し、前記サーバ装置において複数の医療機関より送信される前記情報を個人ごとに蓄積しておき、少なくとも医療行為を施す者から要求があった場合に、医療行為を受ける者に係る前記蓄積されている医療に係る情報を、前記医療行為を施す者の権限の範囲内で提供する医療情報管理方法。

【請求項24】前記各医療機関は、前記医療機関は、複数の診療標榜科目を有する医療機関、複数の診療標榜科目を有する医療機関の各標榜科目診療機関、単一の診療標榜科目の医療機関、救急搬送車を含む救急医療設備、健康診断を行なう医療機関、人の器官の移植に係わる機関の少なくともいずれかを含む請求項23に記載の医療情報管理方法。

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【請求項25】前記個人の医療に係る情報は、個人を特定する情報、血液型、家族・連絡先情報、既往症履歴、アレルギー情報、受診履歴、治療履歴、処方履歴、投薬履歴、救急処置履歴、健康診断結果、診療費用情報、ドナー情報および保険情報の、少なくともいずれかを含む情報である請求項23に記載の医療情報管理方法。

【請求項26】さらに、前記医療に係る情報が記憶されている個人または当該個人に係る代理人から要求があった場合には、前記蓄積されている当該個人の医療に係る情報を、当該要求者に対応して決定される所定の範囲内で提供する請求項23に記載の医療情報管理方法。

【請求項27】前記医療行為を施す者の権限は、当該医療行為を施す者の、職務および医療行為を受ける者との関係に基づいて決定される請求項23に記載の医療情報管理方法。

【請求項28】前記医療行為を施す者の権限は、前記医療行為を受ける者の担当医師、医師、看護婦あるいは救急に医療処置を行なう者の少なくともいずれかを含む医療行為を施す者の区分ごとに決定される請求項23に記載の医療情報管理方法。

【請求項29】前記情報の要求を入力する者の識別および認証を行ない、前記識別および認証の結果適切と認められた者からの前記情報の要求を実質的に有効に受け付ける請求項23に記載の医療情報管理方法。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、患者の正確な症状の確認および最適な診療を行なうために必要な患者に係る情報を、いつでも適切に必要なとする医療従事者に提供するための医療情報システム、医療情報サーバ装置および医療情報端末装置と、そのように医療情報を管理する医療情報管理方法に関する。

【0002】

【従来の技術】従来、何らかの疾病や怪我あるいは予防措置などにより医療機関を利用しようとする者（以後、これを患者と言う。）は、通常、症状などに基づいて自らが判断を行なって、内科、外科、耳鼻咽喉科、眼科、産婦人科、神経科などの受診科目（以後、これを診療標榜科目と言う。）を選択し、最寄りの、あるいは掛かりつけの医療機関へ出向くことになる。そして出向いた医療機関では、問診票のようなアンケートに回答し、これを参考にしながら医師の診察を受ける場合が多い。また、再診時には、それまでの症状や診療措置、投与薬剤などが記録された患者ごとのカルテが参照されて、医師により、症状の確認や新たな診療装置などが行なわれる。

【0003】

【発明が解決しようとする課題】しかしながら、このよ

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うな従来の診療方法、受診方法においてはいくつかの課題がある。まず、患者あるいは付き添いの者が患者の症状を適切に医師に申告するには、たとえ問診票を用いたとしても限界があり、そうした問診票あるいは患者の申告はあくまでも概略の予備情報として利用するのみで、それ以上の重要性は期待できない。そこで、当然のことながら実際の患者の様態、症状などは医師が診察を行なって把握することになるが、患者の症状の把握や最適な治療を医師の技量にのみ委ねるのも限界があり、医師にとって酷である場合がある。たとえば、既往症や、親族の疾病状況、遺伝的疾患履歴、あるいは他の診療標榜科目での治療状況や投薬状況、最近の治療状況や投薬状況などを知ること、初めて症状の把握や治療を適切に行なえる場合などである。

【0004】もちろん、そのような状況を把握するために前述したような問診票を患者に記載してもらうわけであるが、前述したように、専門家ではない患者が自分の記憶に基づいて記載する問診票の内容は、必要な情報が十分記載されない場合が多い上に、記載された内容も完全に信用するわけにはいかない。その結果、患者の診断は、結局医師の勘と経験と医術能力に委ねられてしまうことになる。

【0005】このような状況の下で患者の症状の確認の精度をあげるために、医師が予備診断などを行なう場合がある。しかし、この予備診断には時間や手間がかかり、迅速な診療を行なうことができない。また、このような、十分かつ適切な情報がないために正確な症状の確認や最適な診療ができないという問題は、患者が、通常生活を行なっている地域以外の地域で診療を受ける場合、すなわち、旅行や出張など、あるいは不慮の事故などにより通常掛かっている病院などで診療を受ける場合により顕著となる。

【0006】したがって本発明の目的は、患者の正確な症状の確認および最適な診療を行なうために必要な患者に係わる情報を、いつでも適切に必要なとする医療従事者に提供することができる医療情報システム、医療情報サーバ装置および医療情報端末装置を提供することにある。また本発明の他の目的は、患者の正確な症状の確認および最適な診療を行なうために必要な患者に係わる情報を、適切に管理し、必要とする医療従事者に適切に提供することができる医療情報管理方法を提供することにある。

【0007】

【課題を解決するための手段】前記課題を解決するために、本発明に係る医療情報システムは、個人の医療に係る情報を記憶し、少なくとも医療行為を施す者からの要求に応じて、前記医療に係る情報が記憶されている個人であって当該医療行為を受ける者に係る前記情報を検索し、前記医療行為を施す者の権限の範囲内の情報を出力するサーバ装置と、前記出力される前記医療行為を受け

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る者に係る前記情報が入力され、少なくとも前記医療行為を施す者に提供する通信端末装置とを有する。

【0008】好適には、前記通信端末装置は、医療機関に各々設けられ、前記設けられた複数の前記通信端末装置と前記サーバ装置は、前記情報を送受信可能な通信ネットワークにより接続されている。好適には、前記サーバ装置は、前記情報の要求を行なう者の識別および認証を、前記通信端末装置を介して、当該情報要求者が保持する可搬型情報処理媒体の機能を用いて行なう。

【0009】特定的には、前記医療機関は、複数の診療標榜科目を有する医療機関、複数の診療標榜科目を有する医療機関の各標榜科目診療機関、単一の診療標榜科目の医療機関、救急搬送車を含む救急医療設備、健康診断を行なう医療機関、人の器官の移植に係わる機関の少なくともいずれかを含む。また特定的には、前記個人の医療に係わる情報は、個人を特定する情報、血液型、家族・連絡先情報、既往症履歴、アレルギー情報、受診履歴、治療履歴、投薬履歴、救急処置履歴、健康診断結果、診療費用情報、ドナー情報および保険情報の、少なくともいずれかを含む情報である。

【0010】好適には、前記サーバ装置は、さらに、前記医療に係る情報が記憶されている個人または当該個人に係る代理人からの要求に応じて、当該個人に係る前記情報を検索し、当該要求者に対応して決定される所定の範囲内の情報を出力する。好適には、前記通信端末装置は、さらに所定の地域ごとに各々設けられ、前記設けられた複数の前記通信端末装置と前記サーバ装置は、前記情報を送受信可能な通信ネットワークにより接続されている。

【0011】好適には、前記サーバ装置においては、職務および医療行為を受ける者との関係に基づく医療行為を施す者の所定の区分ごとに、出力する情報の範囲が決定されており、前記検索した情報を、当該情報の要求を行なった前記医療行為を施す者の前記区分に基づいて決定される所定の範囲内で出力する。特定的には、前記医療行為を施す者の所定の区分は、前記医療行為を受ける者の担当医師、医師、看護婦あるいは救急に医療処置を行なう者の少なくともいずれかを含む。

【0012】また、本発明に係る医療情報サーバ装置は、個人の医療に係る情報を記憶する記憶手段と、通信ネットワークを介して送信される、医療行為を施す者からの、医療行為を受ける者に係る前記情報の要求を受信する要求受信手段と、前記要求された前記医療行為を受ける者に係る前記情報を検索する情報検索手段と、前記検索した情報より前記医療行為を施す者の権限の範囲内の所定の情報を選択する情報選択手段と、前記選択した情報を前記通信ネットワークを介して、前記医療行為を施す者に送信する情報送信手段とを有する。

【0013】また、本発明に係る医療情報端末装置は、特定の個人の医療に係る情報の要求を入力する要求入

力手段と、前記入力された要求を、通信ネットワークを介して、個人の医療に係る情報を記憶し、要求に応じて要求された情報を検索し、情報要求者の権限の範囲内の情報を出力するサーバ装置に送信する要求送信手段と、前記サーバ装置より通信ネットワークを介して送信される前記情報を受信する情報受信手段と、前記受信した情報を出力する情報出力手段とを有する。

【0014】また、本発明に係る医療情報管理方法は、各医療機関で発生した個人の医療に係る情報をサーバ装置に送信し、前記サーバ装置において複数の医療機関より送信される前記情報を個人ごとに蓄積しておき、少なくとも医療行為を施す者から要求があった場合に、医療行為を受ける者に係る前記蓄積されている医療に係る情報を、前記医療行為を施す者の権限の範囲内で提供する。

【0015】

【発明の実施の形態】本発明の一実施の形態の医療情報システムについて、図1～図6を参照して説明する。

【0016】まず、医療情報システム1の概要について図1を参照して説明する。図1は、その医療情報システム1の機能の概要を説明するための図である。医療情報システム1は、各医療機関で収拾したあるいは発生した患者に係わる情報を一元的に蓄積して管理し、あらたに患者が何らかの医療行為を受ける場合に、その患者に係わる情報を医療機関に提供することにより、患者の正確な症状の確認および最適な診療を行なえるようにしたシステムである。

【0017】具体的には、患者31は、通常と同じように、たとえばA医療機関21に行って健康診断を受けたり、B医療機関22に行って疾病の診療や外科治療などの処置を受けたり、あるいは、突発的な事故や疾病により救急車などの緊急医療設備23を利用したりする。その際、各医療機関21～23においては、カルテ管理サーバ10に要求をしてその患者31の既往症、現在の服用薬物、受診状態、アレルギー情報などを獲得し、これに基づいて、既にかかっている疾病がさらに悪化したり、アレルギーが発生したり、薬物による副作用などが発生しないように、適切な検査や治療などを行なう。

【0018】そして、患者31を治療した医療機関21～23は、今回の治療に係わる症状や医師の所見、処置内容、投与薬物、新たに判明したアレルギーなどの情報、および、本実施の形態においては診療費用、検診費用までの情報を、カルテ管理サーバ10に蓄積しておく。これにより、次回その患者31の治療を行なう時には、最新の情報を参照して適切な処置が行なえるようにしておく。また、医療情報システム1においては、患者31がカルテ管理サーバ10に直接アクセスを行なうて、自分のカルテデータを確認することもでき、また、患者31がA医療機関21やB医療機関22に通信ネットワークを介してアクセスすることにより、検査や

診療の予約、あるいは、問診などを行なうこともできる。

【0019】また、仮にその患者31の臓器などが移植により利用される時には、いわゆるドナーバンク24と言われる医療機関がカルテ管理サーバ10にアクセスし、そのドナーのデータをチェックすることにより、臓器の整合性などをより適切かつ迅速にチェックすることができるものである。医療情報システム1は、このような医療に係わる種々の情報、換言すればあらゆる情報を一元的に管理し、有効に利用できるようにしたものである。

【0020】このような医療情報システム1の構成について、図2を参照して具体的に説明する。図2に示すように、医療情報システム1は、医療情報サーバ装置100、医療情報端末装置200、救急車情報端末装置210、患者端末装置300および通信ネットワーク400を有する。

【0021】医療情報サーバ装置100は、各個人ごとの医療情報を蓄積しておき、医療情報端末装置200あるいは患者端末装置300を含む任意のノードから通信ネットワーク400を介して要求される医療情報の要求に応じて、適宜情報を提供するサーバである。医療情報サーバ装置100の構成について図3を参照して説明する。医療情報サーバ装置100は、カルテ管理サーバ10、個人認証／照合部120および診療標科科目選択部130を有する。なお、図1においては医療情報サーバ装置100の主たる機能であるこのカルテ管理サーバ10の構成部のみを図示したものである。

【0022】カルテ管理サーバ10は、前述したように、患者の治療を行なう時に最新の情報を参照して適切な処置が行なえるように、各患者ごと医療機関の利用ごとの、症状や医師の所見、処置内容、投与薬物、新たに判明したアレルギー、診療費用、検診費用などの情報が蓄積されたサーバであり、患者を治療した医療機関により情報が蓄積される。

【0023】個人認証／照合部120は、通信ネットワーク400を介して医療情報サーバ装置100にアクセスしてきた各利用者が、医療情報サーバ装置100を使用する権限を有する者か否かをチェックする。本実施の形態において、医師や看護婦などを初めとする医療機関の関係者や、診療を受ける患者など、医療情報システム1の全ての利用者は、いわゆるICカードで構成されるIDカードを保持しているものとする。そして、このIDカードを医療情報端末装置200および患者端末装置300に装着することにより、各端末装置で個人に認証を行い、最終的には医療情報サーバ装置100に登録されている利用者リストなどと照合されることにより、その利用者が医療情報サーバ装置100をしようする権限を有する者か否かをチェックする。

【0024】ここで、この時の各利用者が保持するID

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カードの例を図4に示す。図4(A)は、指紋所号により本人認証を行なうIDカード510を示す。このIDカード510においては、表面に、ステッカーあるいは液晶によりID情報記載部511が形成されており、ID内容が一目で判別できるようになっている。そして、特にIDカード510においては、表面に指紋検出器512が設けられており、ここで検出された指紋が、内部の指紋照合器により照合されて、本人認証が行なわれる。なお、IDカード510の表面には太陽電池パネル513により形成されており、これによりIDカード510の内部回路に電源が供給される。

【0025】図4(B)は、音声照合あるいは声紋照合により本人認証を行なうIDカード520を示す。このIDカード520においても、表面にID情報記載部511が形成されており、ID内容が一目で判別できるようになっている。そして、特にIDカード520においては、表面にマイクロフォン522が設けられており、ここで検出された音声、内部の音声照合器あるいは声紋照合器により照合されて、本人認証が行なわれる。

【0026】図4(C)は、虹彩照合により本人認証を行なうIDカード530を示す。このIDカード530においても、表面にID情報記載部511が形成されている。そして、特にIDカード530においては、表面にカメラ532が設けられており、ここで検出された目などの画像が、内部の虹彩照合器により照合されて、本人認証が行なわれる。以上、各利用者が保持するIDカードの例の説明である。

【0027】引き続き、医療情報サーバ装置100の構成について説明する。診療標榜科目選択部130は、通信ネットワーク400を介して医療情報サーバ装置100にアクセスしてきた患者に対して、その診療標榜科目を受診すればよいかを案内する。診療標榜科目選択部130は、その患者に対して所定の問診、すなわちアンケートを行い、その結果に基づいて受診を勧める診療科目を決定する。なお、患者は、自宅の患者端末装置300より医療情報サーバ装置100にアクセスする場合もある。また、情報入力手段230は、対話形式によりアンケートを行なってもよいし、予めアンケート内容を医療情報端末装置200および患者端末装置300に送信しておき、医療情報端末装置200および患者端末装置300においてアンケートを行い、アンケート結果を一括して受信するようにしてもよい。

【0028】カルテ管理サーバー10は、実際に各個人の医療情報を蓄積して、要求に応じて出力する。カルテ管理サーバー10の構成を図5に示す。図5に示すように、カルテ管理サーバー10は、通信部140、検索部150、データベース160および選択部170を有する。

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【0029】通信部140は、まず、通信ネットワーク400を介して医療情報端末装置200および患者端末装置300と通信を行い、医療行為を受ける特定の個人の医療情報の要求を受け付ける。要求を受け付けたら、通信部140は、その要求者のIDを個人認証／照合部120に通知することにより、その要求者が、患者の医療従事者、患者本人、あるいは、患者の代理人であるか否か、すなわちその患者の医療データを要求する適正な者であるか否かを検出する。そして、要求者が適切な権利者であった場合には、その情報の要求を検索部150に出力する。また、通信部140は、選択部170より入力される、医療情報の要求に対する回答を、要求元の医療情報端末装置200または患者端末装置300に送信する。

【0030】検索部150は、通信部140より入力される特定の個人の医療情報の要求に基づいて、データベース160をアクセスし、その個人の医療情報を読み出し、選択部170に出力する。

【0031】データベース160は、実際に各個人の医療情報を蓄積するデータベースである。本実施の形態においては、各個人ごとに、権限などを規定するための照合のための情報、氏名、生年月日、性別、血液型などの識別情報、住所、電話番号、勤務先、勤務先電話番号、家族情報、保健情報などの属性情報、既往症履歴、診療情報、投薬情報、治療情報などの狭義の医療情報、診療代情報、ドナーの提供あるいは要求に係るドナー情報などの情報が記録されている。

【0032】選択部170は、検索部150より入力されるデータベース160より読み出した特定の個人の医療情報より、その情報の要求者の権限に基づいて、外部に出力してよい情報を取捨選択し、その情報を通信部140に出力する。

【0033】このような構成の医療情報サーバ装置100においては、通信ネットワーク400を介して医療情報端末装置200および患者端末装置300から入力される診療標榜科目の選択要求に対しては、個人認証／照合部120においてその要求者が適切か否かをチェックした後、診療標榜科目選択部130において適宜アンケートを行なって勧める診療標榜科目を決定し通信ネットワーク400を介して通知する。また、実際に個人の医療情報の要求がなされた時には、同じく個人認証／照合部120においてその要求者が適切か否かをチェックした後、検索部150がデータベース160よりその患者のデータを読み出し、選択部170が要求者に応じて出力項目を取捨選択した後、通信ネットワーク400を介して送信する。

【0034】医療情報端末装置200は、各医療機関、すなわち、病院、医院、診療所、保健所、あるいは、ドナーバンクなどに配置される、通信ネットワーク400を介して医療情報サーバ装置100に接続可能な端末装

置である。この医療情報端末装置200を介して、各医師は患者の情報、すなわち既往症、アレルギー、遺伝状態、投薬状態などの情報を獲得し、適切な症状の把握および処置の決定などを行なう。また、たとえば病院の受け付けの側や、待合室など配置された医療情報端末装置200は、来院者に自由に操作され、通信ネットワーク400を介して医療情報サーバ装置100に接続されて、受診科目の選択に用いられる。

【0035】救急車情報端末装置210は、救急車などの移動緊急医療施設に設けられた端末装置であり、実質的にその機能は医療情報端末装置200と同一の構成である。

【0036】患者端末装置300は、各家庭、あるいは、病院とは直接関係ない市役所などといった公共施設などに設けられ、各個人が通信ネットワーク400を介して医療情報サーバ装置100および医療情報端末装置200に接続するいわゆる通信端末装置である。この患者端末装置300を介して、患者は、医療情報端末装置200に対して診療の予約を行なうことができる。また、医療情報サーバ装置100にアクセスし、医療情報サーバ装置100の機能により標榜科目を決定する。また、自分の医療情報を閲覧したい時に、医療情報サーバ装置100にアクセスし、医療情報サーバ装置100の機能により自らの登録されている医療情報を検出する。

【0037】通信ネットワーク400は、医療情報サーバ装置100、医療情報端末装置200、救急車情報端末装置210および患者端末装置300を相互に通信可能に接続し、医療情報の要求、医療情報の出力、それに係わる各要求者などの認証などの医療情報提供のための種々の処理に係わるデータを、それら各装置間で伝送する。通信ネットワーク400は、有線通信網、無線通信網、インターネットなどのコンピュータネットワーク、有線、無線の電話網、衛星回線などの種々の通信手段が、必要に応じて適宜組み合わせられた広域の通信網である。

【0038】このような構成の医療情報システム1の主な処理の流れについて、図6を参照して説明する。まず、何らかの疾病になった患者は、たとえば患者端末装置300より通信ネットワーク400を介して総合病院の医療情報端末装置200にアクセスし、診療の申し込み、すなわち予約を行なう（ステップS10）。この時に患者端末装置300がアクセスする先は、たとえば地域ごとに配置されたような複数の病院を紹介するための装置のようなものであってもよい。医療情報端末装置200では、患者端末装置300からの予約を受け付けたら（ステップS11）、患者端末装置300に対して問診に相当するアンケートを行う（ステップS12）。そして、たとえば医療情報サーバ装置100の診療標榜科目選択部130にアクセスするなどして、推薦する診療標榜科目を検出し、患者端末装置300に対して案内す

る（ステップS13）。

【0039】このような処理を行なった後に、患者が実際に病院に来院したら、たとえば診察室などで来院した患者が本人かどうかをチェックする。そのために、たとえば患者が保持しているIDカードと医療情報サーバ装置100の個人認証／照合部120が連動してチェックする（ステップS14）。そして、来院したのが本人であれば（ステップS15）、たとえば医師の医療情報端末装置200の操作により、医療情報サーバ装置100のカルテ管理サーバ10にアクセスし、その患者の医療情報を読み出し（ステップS16）、医療情報端末装置200に表示する（ステップS17）。医師は、この表示された情報を参考にしながら、患者の診察を行なう（ステップS18）。診察が終了したら、たとえば医療情報端末装置200に対して診療記録、すなわち処置や処方箋を記入し（ステップS19）、処方箋は同じ病院内の薬剤局あるいは近隣の薬局などに表示する（ステップS20）。

【0040】診察室を出た患者、あるいは、薬のみをもらいに来た患者の家族などの代理人は、薬局の近隣にある患者端末装置300より、その患者本人あるいは適正な代理人であるか否かのチェックを受ける（ステップS21）。これは、患者端末装置300より医療情報サーバ装置100の個人認証／照合部120の機能呼び出し、前述したように患者あるいは代理人が保持しているICカードなどと連動することにより行なう。そして、患者あるいは適正な代理人であることが確認できたら、実際に薬を受け取る（ステップS22）。薬局の局員が薬を与えたことを患者端末装置300に入力することにより、この情報が会計を行なう部署に表示される（ステップS23）。

【0041】そして、薬を受け取った患者あるいは代理人が会計箇所に来ると、再び患者本人あるいは適正な代理人であるか否かのチェックを受け（ステップS24）、正当であれば実際に会計処理を行い（ステップS25）、一連の処理を終了する（ステップS26）。

【0042】このように、本実施の形態の医療情報システム1によれば、病院の診療の予約を、患者端末装置300より直接行なうことができる。また、患者のカルテデータは、通信ネットワーク400を介した医療情報サーバ装置100においても、患者端末装置300内のローカルなシステム内においても、いずれも電子化されたデータとして扱われている。したがってカルテの検索、その搬送などの工程がなくなり、カルテのハンドリングに係わる処理時間が大幅に短縮される。そしてこれらの結果、患者の病院での待ち時間が大幅に短縮される。そしてさらには、院内感染の可能性が大幅に減少する。

【0043】また、個人の医療記録（カルテ）を診療機関で共有することで、個人の病歴（既往症）、投与薬剤の状況などの情報を迅速かつ正確に把握することがき、

個人の記憶に頼らない正確な情報に基づく適切な処置が可能となる。特に、救急車などで緊急の医療行為を行なう場合には、たとえば意識不明で患者から何ら情報が得られない状況の下でも適切な情報を得ることができ、適切な処置が行なえる。また、海外などで疾病した場合にも、同様に適切な処置が受けられる。

【0044】また、この共通のデータベースは、医療従事者であってもその職務や、患者との関係に基づいて、そのアクセス範囲が厳格に制限されている。したがって、患者のプライバシーの保護は維持される。また、一般の患者、個人（当人）からの要請によるレセプトの公開などを容易に行なえるようになるので、情報公開の促進、普及が図れる。

【0045】また、このように医療情報を全て電子化したことにより、保険の適用や、医療費の支払いなどに、電子マネーの概念を適用することができ、より利便性の高い医療機関とすることができる。また、たとえば保険料控除システムと連動することにより、医療費控除の事務工数が大幅に低減される。また、医療事務処理の簡易化、合理化、効率化、迅速化が図れ、医療費を抑制することができる。

【0046】その他、他のドナーバンクへの照会が容易になり、救命医療に貢献することができる。また、医療情報の共有化により、症例、処方の開示による医療従事者の医療技術の向上も図れる。

【0047】また、救急車において緊急医療が必要な時には、該当者の個人カルテ情報を閲覧することにより、患者の既往症や持病、アレルギー体質の有無、血液型などの応急処置の参考情報として利用することができる。そしてこの場合、たとえば、患者のIDを確認する手段として、個人認証／照合機能を有したICカードで非接触式のものを使うことで、口頭から得にくい状況でも容易にアクセスできる。

【0048】なお、本発明は本実施の形態に限られるものではなく、任意好適な種々の変更が可能である。たとえば、本実施の形態においては、各個人ごとの医療情報を医療情報サーバ装置100において集中的に管理している一極集中型のシステムを例示して本発明を説明した。しかし、たとえば各医療機関が各々患者のカルテ情報を記憶し管理しているデータベースを有し、それらがたとえば管理サーバなどの機能により協調、連係して、統合的に医療情報を提供するような、分散処理型の構成としてもよい。すなわち、本発明の主旨は、論理的に統合された医療情報を適切に提供することにある、実際の物理的な情報の記憶形態、ネットワークの接続形態、データベースの管理形態などは、任意の形態でよい。

【0049】また、前述した医療情報端末装置200および患者端末装置300などの端末装置は、医療情報専用の端末装置として構成してもよいし、通常の情報検索

装置により構成してもよい。また、各家庭にある通信機能を有する情報端末装置や、通信機能を有する携帯型情報処理装置、あるいは携帯電話などにより構成してもよい。本発明に係わる医療情報を受信する端末装置は、これら通信機能を有する任意の情報処理装置により構成することができる。

【0050】また、本実施の形態においては、各個人が認証に用いるIDカードを図4に例示して説明したが、これらの構成に限定されるものではなく、個人を特定することのできる任意の媒体をIDカードとして使用してよい。たとえば、超小型のHDDカード、超小型のCD-ROM/CD-R/CD-RWなどの光ディスク、超小型のMOなどの光磁気ディスク、磁気カードなどを利用してもよい。

【0051】

【発明の効果】このように、本発明によれば、患者の正確な症状の確認および最適な診療を行なうために必要な患者に係わる情報を、いつでも適切に必要な医療従事者に提供することができる医療情報システム、医療情報サーバ装置および医療情報端末装置を提供することができる。また、患者の正確な症状の確認および最適な診療を行なうために必要な患者に係わる情報を、適切に管理し、必要とする医療従事者に適切に提供することができる医療情報管理方法を提供することができる。

【図面の簡単な説明】

【図1】図1は、本発明の一実施の形態の医療情報システムの概要を説明するための図である。

【図2】図2は、図1に示した医療情報システムの構成を示す図である。

【図3】図3は、図2に示した医療情報システムの医療情報サーバ装置の構成を示す図である。

【図4】図4は、図3に示した医療情報サーバ装置の個人認証／照合部に關わり、医療情報サーバ装置の各利用者が保持するIDカードを説明するための図である。

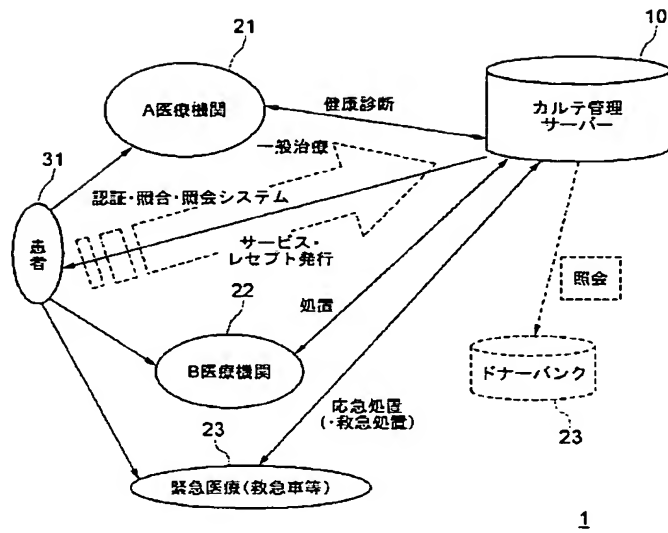
【図5】図5は、図3に示した医療情報サーバ装置のカルテ管理サーバの構成を示すブロック図である。

【図6】図6は、図2に示した医療情報システムを利用して患者が医療行為を受ける場合の、処理の流れを説明するための図である。

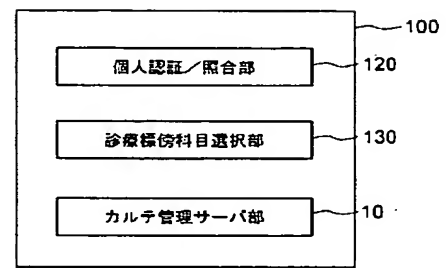
【符号の説明】

1…医療情報システム、10…カルテ管理サーバ、21～24…医療機関、31…患者、100…医療情報サーバ装置、120…個人認証／照合部、130…診療標準科目選択部、140…通信部、150…検索部、160…データベース、170…選択部、200…医療情報端末装置、300…患者端末装置、400…通信ネットワーク、510、520、530…IDカード、511…ID情報記載部、512…指紋検出器、513…太陽電池パネル、522…制御部、532…入出力部

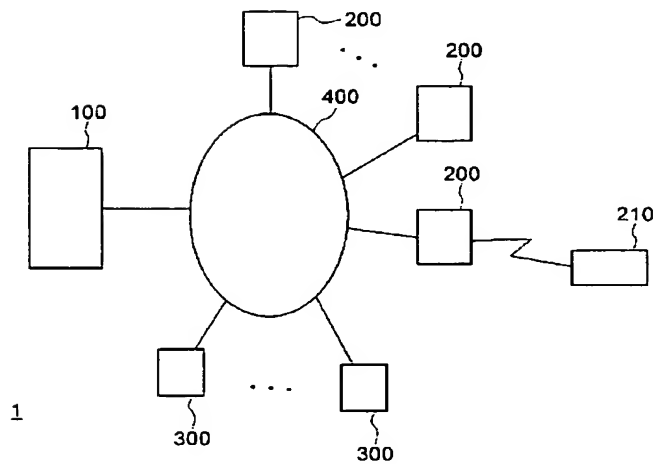
【図1】



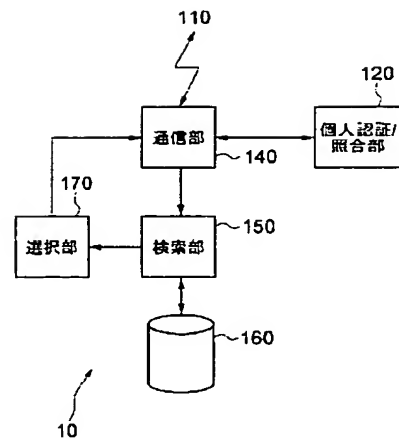
【図3】



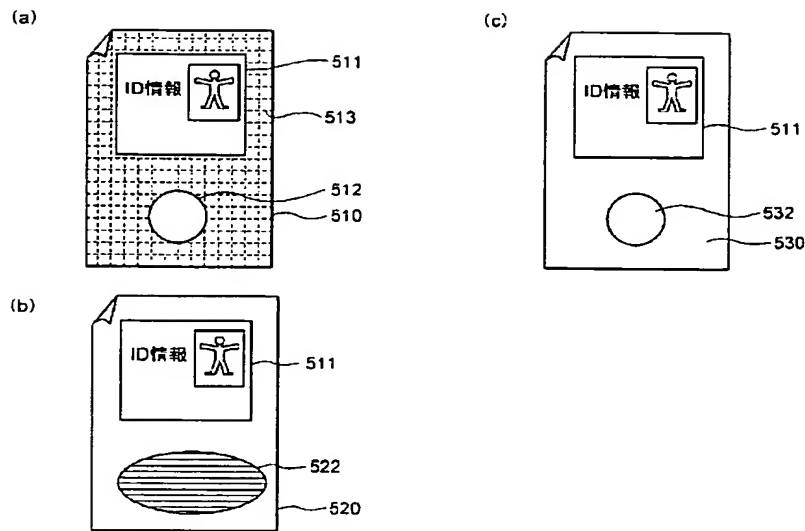
【図2】



【図5】



【図4】



【図6】

